

# INFORMATION FOR TECHNICAL REVIEW – FIBERGLASS REINFORCED PLASTICS OPERATIONS

## Guidance for Permit Applicants

The following information will be used for the technical review of a Permit to Install application for a **fiberglass reinforced plastics (FRP) operation**. This information is in addition to the general requirements outlined in the AQD document “Information for an Administratively Complete Permit to Install Application,” Part 2 - Additional Supporting Information, Items A through F. Please note that all the information may not be needed for each application, nor is this document necessarily all inclusive. Additional information beyond what is identified in this guidance may be necessary to complete the technical review of any individual application. In the event a determination is made that new additional information is needed for all technical reviews, this document will be updated.

All referenced guidance documents are available on the Air Quality Division (AQD) website at [AQD Permits to Install / New Source Review](#) or you may contact the Permit Section at 517-284-6802.

### A. Process Description

1. Describe the FRP manufacturing process including:
  - a) The parts being manufactured (i.e., boats, RVs, bathtubs).
  - b) How the parts are manufactured (i.e., closed mold, open lamination/gelcoat process)
  - c) All materials that will be used including mold wax/release agents, gelcoats (tooling and production), resins (tooling and production), catalysts, cleanup solvents, adhesives, coatings, etc. List all toxic air contaminants (TACs) and hazardous air pollutants (HAPs) used in the process, and the potential amount of each compound to be used in one year and one hour.
  - d) The application equipment (bucket and brush, atomized or non-atomized, closed mold).
2. Describe any booths that are used in the process.

### B. Regulatory Discussion

The following state air pollution control regulations may be applicable. Please review these regulations carefully to determine if they apply to your process and summarize the results in the application. The [Air Pollution Control Rules](#) may be viewed from the [AQD website](#). Click on “State Air Laws and Rules.”

1. State of Michigan, Department of Environment, Great Lakes, and Energy, Act 451 of 1994, Natural Resources and Environmental Protection Act, Part 55 Air Pollution Control and the following promulgated rules:
  - a) Rules 215 and 216 apply to an existing facility which has a current Renewable Operating Permit (ROP). A Permit to Install issued for the installation of new equipment or modifications to existing equipment is incorporated into an ROP pursuant to Rules 215 and 216.
  - b) Rules 1901 - 1908 apply to a major source and/or a major modification at a source which is located in a nonattainment area. A nonattainment area is one where the National Ambient Air Quality Standards (NAAQS) are not being met. These rules require compliance with the lowest achievable emission rate (LAER) and an emission reduction (offset) for each nonattainment air contaminant emitted in significant quantities as defined by Rule 119(e). However, a source may choose to “net out” of the requirements of these rules. For additional detailed information regarding “netting”, refer to Chapter 5 of the document entitled “PSD Workbook: A Practical Guide to Michigan’s Prevention of Significant Deterioration Regulations”, May 2014. This guide is referred to as the AQD’s PSD Workbook and can be found on the [Permits to Install \(PTI\) / New Source Review \(NSR\)](#) webpage. Click on ‘Application Form Instructions & Guidance Documents’. Although the guidance document is in regard to Michigan’s PSD regulations, the netting analysis performed for nonattainment NSR is the same as that performed for PSD.

- c) Rules 1801 – 1823 apply to a major source and/or a major modification at a source which is located in an attainment area. An attainment area is one where the NAAQS are being met. These rules require compliance with Best Available Control Technology (BACT) and a demonstration that the proposed emissions will not contribute to the deterioration of air quality and will not violate any NAAQS or Prevention of Significant Deterioration (PSD) increment. Refer to the [AQD's PSD Workbook](#) for additional detailed information. However, a source may choose to “net out” of the requirements of the PSD rules. For additional detailed information regarding “netting”, refer to Chapter 5 of the [AQD's PSD Workbook](#) for additional detailed information.
  - d) If the process or equipment was installed or modified after April 17, 1992, Rules 224 – 230 apply. Rule 224 requires the application of Best Available Control Technology for toxics (T-BACT) for all non-volatile organic compound (VOC) toxic air contaminants (TACs). T-BACT does not apply to emissions of VOCs. Rule 225 limits the emission impacts of TACs and requires a demonstration that the proposed emission of each TAC complies with a health-based screening level. Compliance can be demonstrated using any of three methods described in Rule 227(1) including the use of computerized dispersion modeling. Refer to “Guidelines for Conducting a Rule 224 T-BACT Analysis,” “TACs-Demonstrating Compliance with Rule 225,” and “Dispersion Modeling Guidance” for additional detailed information.
  - e) If the process or equipment was installed or modified after August 1, 1979, Rule 702 applies. This rule requires Best Available Control Technology (BACT) for new sources of VOCs. Refer to “Instructions for Conducting a BACT Analysis” for additional detailed information.
  - f) Rule 901 prohibits emissions of an air contaminant in quantities that cause either a) injurious effects to human health or safety, animal life, plant life of significant economic value, or property; or b) unreasonable interference with the comfortable enjoyment of life and property.
2. The PSD increments (40 CFR 52.21 (c)) and the NAAQS (40 CFR 52.21(d)) apply to all sources throughout the United States, regardless of size. Compliance with these air quality standards can be demonstrated using computerized dispersion modeling. An applicant for a PSD permit is required to submit PSD increment modeling for PM10, PM2.5, SO<sub>2</sub> and NO<sub>x</sub>, and NAAQS modeling for PM10, PM2.5, SO<sub>2</sub>, NO<sub>x</sub>, CO, Ozone, and Lead as part of the application. Modeling for sources not subject to PSD may be done by the AQD. Refer to “Guidelines for Dispersion Modeling” for additional detailed information.
  3. National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, Subpart VVVV, Boat Manufacturing is available on the U.S. Environmental Protection Agency (USEPA) website at [Boat Manufacturing NESHAP](#).
  4. NESHAP, 40 CFR Part 63, WWWW, Reinforced Plastic Composites Production applies to specific processes used to manufacture reinforced plastic composite products and it should be consulted carefully to determine applicability to your process. This regulation is also available on the USEPA Website at [Reinforced Plastic Composites Production NESHAP](#).
  5. If the part being manufactured is painted after production, NESHAP, 40 CFR Part 63, Subpart PPPP, Surface Coating of Plastic Parts and Products may also apply. This regulation is also available on the USEPA Website at [Surface Coating of Plastic Parts and Products NESHAP](#). These regulations should be consulted carefully to determine applicability to your FRP process.

## C. Control Technology Analysis

1. Rule 702 BACT applies to all sources of VOCs proposed to be installed within the State of Michigan. A Rule 702 BACT analysis is very similar to a PSD top-down BACT analysis. For those sources completing a PSD top-down BACT analysis for VOCs, a Rule 702 BACT analysis is not required. Michigan’s air pollution control rules also define BACT as an emission limit. Rule 702 BACT should be applied on a flexible grouping of equipment – subdivisions of emission units and/or groupings of emission units – if it is logical to do so. Logical means that the principles on which the groupings (or subdivisions) are made are consistent with federal guidance and sound engineering practices. Refer to “Instructions for Conducting a BACT Analysis” for additional detailed information.

2. Best Available Control Technology for Toxics (T-BACT) means the maximum degree of emission reduction which the Department determines is reasonably achievable for each process that emits toxic air contaminants (TACs) considering energy, environmental and economic impacts, and other costs. T-BACT does not apply to VOCs. The analysis must be specific to the process and the TACs subject to a T-BACT review. T-BACT limits can be expressed as an emission limit, control equipment requirements, and/or work practice standards. Refer to “Guidelines for Conducting a Rule 224 T-BACT Analysis” for additional detailed information.
3. Lowest achievable emission rate (LAER) applies to a major source and/or a major modification at a source located in a nonattainment area. Please see the [Attainment Status Map](#) on the [AQD website](#) for the current nonattainment status in Michigan. LAER is defined as the lowest emission limitation contained in any State Implementation Plan (SIP) or the lowest emission limitation achieved in practice. Such an emission limit is presumed to be LAER for that source class and category. If an applicant proposes to meet this presumptive LAER, no site-specific control technology determination will be necessary. When an applicant believes the presumptive LAER limit is not achievable, a site-specific determination is required. This determination should include consideration of raw material changes, process changes, and add-on control equipment. The cost of these changes is not considered. Raw material and process changes should be evaluated through technology transfer (i.e., the likelihood that such a change will transfer from one industry to another), based on the manufacture of similar products or use of similar raw materials or fuels. Add-on controls should be evaluated based on the physical and chemical characteristics of the pollutant-bearing exhaust stream.
4. PSD Top-down BACT applies to a major source and/or a major modification at a source of any regulated New Source Review pollutant located in an attainment area. The Clean Air Act defines BACT as “an emission limitation based on the maximum degree of reduction for each pollutant.” BACT should be applied to a flexible grouping of equipment – subdivisions of emission units and/or groupings of emission units – if it is logical to do so. Logical means that the principles on which the groupings (or subdivisions) are made are consistent with federal guidance and sound engineering practices. Refer to Chapter 7 of the [AQD's PSD Workbook](#) for additional detailed information

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